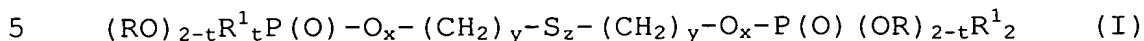


WHAT IS CLAIMED IS:

1. A compound corresponding to the formula:



in which:

- R represents a hydrogen, an alkyl, an aryl, a trialkylsilyl, a trialkylamino or an alkali metal;
- 10 • R^1 represents an alkyl or an aryl;
- x is 0 or 1;
- y is an integer from 1 to 22;
- $z \geq 3$;
- t is 0 or 1.

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2. The compound as claimed in claim 1, characterized in that R is an alkyl radical having from 1 to 6 carbon atoms.

20 3. The compound as claimed in claim 1, characterized in that R is trialkylsilyl group $\text{R}'_3\text{Si}-$ in which the R' substituents represent identical or different alkyl groups having from 1 to 3 carbon atoms.

25 4. The compound as claimed in claim 1, characterized in that R is a trialkylamino group $\text{R}''_3\text{N}-$ in which the R'' substituents represent identical or different alkyl groups having from 1 to 5 carbon atoms.

30 5. The compound as claimed in claim 1, characterized in that R is an alkali metal chosen from Na and K.

6. The compound as claimed in claim 1, characterized in that $x = 0$.

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7. The compound as claimed in claim 6, characterized in that it corresponds to the formula
 $(\text{RO})_2\text{P}(\text{O})-(\text{CH}_2)_y-\text{S}_z-(\text{CH}_2)_y-\text{P}(\text{O})(\text{OR})_2 \quad (\text{II}).$

8. The compound as claimed in claim 6, characterized in that it corresponds to the formula $(RO)R^1P(O)-(CH_2)_y-S_z-(CH_2)_y-P(O)(OR)R'$ (IV).

5 9. The compound as claimed in claim 1, characterized in that $x = 1$.

10. The compound as claimed in claim 9, characterized in that it corresponds to the formula

10 $(RO)_2P(O)-O-(CH_2)_y-S_z-(CH_2)_y-O-P(O)(OR)_2$ (III).

11. The compound as claimed in claim 9, characterized in that it corresponds to the formula

$(RO)R^1P(O)-O-(CH_2)_y-S_z-(CH_2)_y-O-P(O)(OR)R^1$ (V).

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12. The compound as claimed in claim 1, characterized in that z is on average equal to 4.

13. The compound as claimed in claim 1, characterized in that R^1 is an alkyl radical having from 1 to 18 carbon atoms or an aryl radical chosen from the phenyl, benzyl or tolyl radicals.

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14. The compound as claimed in claim 1, characterized in that y is an integer from 2 to 4.

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15. A composite material comprising an elastomeric matrix and an inorganic filler, characterized in that it comprises a compound as claimed in claim 1 as coupling agent.

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16. The material as claimed in claim 15, characterized in that the inorganic filler is an oxide, a hydroxide, a carbonate or a silicoaluminate.

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17. The material as claimed in claim 15, characterized in that the inorganic filler is a metallic material chosen from steels, aluminum and copper.

18. A process for the preparation of a compound as claimed in claim 7 in which each of the R groups is an alkyl Ra and $z = 4$, characterized in that:

- during a first stage, the trialkoxyphosphonate
5 $P(ORa)_3$ (VI) is reacted with the dibromoalkylene $Br-(CH_2)_y-Br$ (VII) at a temperature of the order of $140^\circ C$ in order to obtain $Br-(CH_2)_y-P(O)(ORa)_2$ (VIII),
- during a second stage, the phosphonate $Br-(CH_2)_y-P(O)(ORa)_2$ (VIII) is reacted with Na_2S_4 under
10 reflux of the methanol in order to obtain the compound $(RaO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ (IIa).

19. A process for the preparation of a compound as claimed in claim 7 in which each of the R groups is a
15 trialkylsilyl R'_3Si- , characterized in that it consists in reacting the compound $(RaO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ (IIa) with a trialkylsilyl bromide R'_3SiBr in a 1/4 molar ratio in order to obtain the compound (IIb) $(R'_3SiO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(OSiR'_3)_2$.

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20. A process for the preparation of a compound as claimed in claim 7 in which R is H, characterized in that it consists in hydrolyzing a compound $(Ra)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ in which Ra is an
25 alkyl or hydrolyzing or alcoholyzing a compound $(R'_3SiO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(OSiR'_3)_2$.

21. A process for the preparation of a compound as claimed in claim 10 in which R represents H,
30 characterized in that:

- during a first stage, $P(O)Cl_3$ is reacted with $HO(CH_2)_yCl$ in stoichiometric proportions in order to obtain the compound $Cl(CH_2)_yOP(O)Cl_2$;
- during a second stage, the compound
35 $Cl(CH_2)_yOP(O)Cl_2$ is hydrolyzed in order to obtain the compound $Cl(CH_2)_yOPO_3H_2$;
- during a third stage, $Cl(CH_2)_yOPO_3H_2$ is reacted with Na_2S_4 under reflux of the methanol and then an ion exchange is carried out in order to obtain the compound

